

In the Claims:

Below is a clean copy of amended claims. A marked-up copy of the amended claims is provided in an accompanying document.

Sub E1 FI
2040. (amended) The method of claim 2039, wherein the one or more heaters comprise at least two heaters, and wherein superposition of heat from at least the two heaters pyrolyzes at least some hydrocarbons within the part of the formation.

Sub E1
2047. (amended) The method of claim 2039, further comprising controlling the heat such that an average heating rate of the part of the formation is less than about 1 °C per day in a pyrolysis temperature range from about 270 °C to about 400 °C.

E2
2048. (amended) The method of claim 2039, wherein providing heat from the one or more heaters to at least the portion of the formation comprises:

heating a selected volume (V) of the hydrocarbon containing formation from the one or more heaters, wherein the formation has an average heat capacity (C_v), and wherein the heating pyrolyzes at least some hydrocarbons within the selected volume of the formation; and

wherein heating energy/day (P_{wr}) provided to the selected volume is equal to or less than $h \cdot V \cdot C_v \cdot \rho_B$, wherein ρ_B is an average formation bulk density, and wherein an average heating rate (h) of the selected volume is about 10 °C/day.

Sub E3 FI
2050. (amended) The method of claim 2039, wherein allowing the heat to transfer to the part of the formation heats the part of the formation to increase a thermal conductivity of at least a portion of the part of the formation to greater than about 0.5 W/(m °C).

Sub E4 FI
2062. (amended) The method of claim 2039, wherein the produced mixture comprises a non-condensable component, wherein the non-condensable component comprises molecular hydrogen, wherein the molecular hydrogen is greater than about 10 % by volume of the non-condensable component at 25 °C and one atmosphere absolute pressure, and wherein the

E⁴ molecular hydrogen is less than about 80 % by volume of the non-condensable component at 25 °C and one atmosphere absolute pressure.

Sub F₁
E⁵ 2072. (amended) The method of claim 2039, wherein allowing the heat to transfer increases a permeability of a majority of the part of the formation to greater than about 250 millidarcy.

2073. (amended) The method of claim 2039, wherein allowing the heat to transfer increases a permeability of a majority of the part of the formation such that the permeability of the majority of the part is substantially uniform.

Sub F₁
E⁶ 2086. (amended) The method of claim 2078, further comprising controlling the heat such that an average heating rate of the part of the formation is less than about 1 °C per day in a pyrolysis temperature range of about 270 °C to about 400 °C.

2087. (amended) The method of claim 2078, wherein providing heat from the one or more heaters to at least the portion of the formation comprises:

heating a selected volume (V) of the hydrocarbon containing formation from the one or more heaters, wherein the formation has an average heat capacity (C_v), and wherein the heating pyrolyzes at least some hydrocarbons within the selected volume of the formation; and

wherein heating energy/day (Pwr) provided to the selected volume is equal to or less than $h \cdot V \cdot C_v \cdot \rho_B$, wherein ρ_B is an average formation bulk density, and wherein an average heating rate (h) of the selected volume is about 10 °C/day.

Sub F₁
E⁷ 2089. (amended) The method of claim 2078, wherein allowing the heat to transfer to the part of the formation heats the part of the formation to increase a thermal conductivity of at least a portion of the part of the formation to greater than about 0.5 W/(m °C).

Sub F₁
E⁸ 2101. (amended) The method of claim 2078, wherein the produced mixture comprises a non-condensable component, wherein the non-condensable component comprises molecular hydrogen, wherein the molecular hydrogen is greater than about 10 % by volume of the non-

E8
condensable component at 25 °C and one atmosphere absolute pressure, and wherein the molecular hydrogen is less than about 80 % by volume of the non-condensable component at 25 °C and one atmosphere absolute pressure

E9
Sub F1
2111. (amended) The method of claim 2078, wherein allowing the heat to transfer increases a permeability of a majority of the part of the formation to greater than about 250 millidarcy.

2112. (amended) The method of claim 2078, wherein allowing the heat to transfer increases a permeability of a majority of the part of the formation such that the permeability of the majority of the part is substantially uniform.

Sub F1
E10
5398. (amended) A method of treating a hydrocarbon containing formation in situ, comprising:
evaluating a moisture content of hydrocarbon containing material in the hydrocarbon containing formation to identify a portion of the hydrocarbon containing material with a moisture content that is less than about 20%;
providing heat from one or more heaters positioned in heater wells to the portion to heat the portion so that an average temperature in the portion is above a temperature sufficient to pyrolyze hydrocarbon containing material in the portion; and
producing a mixture from the formation.

Sub F1
E11
5403. (amended) The method of claim 5398, wherein providing heat from the one or more heaters to at least the portion of the formation comprises:
heating a selected volume (V) of the hydrocarbon containing formation from the one or more heaters, wherein the formation has an average heat capacity (C_v), and wherein the heating pyrolyzes at least some hydrocarbons within the selected volume of the formation; and
wherein heating energy/day (Pwr) provided to the selected volume is equal to or less than $h * V * C_v * \rho_B$, wherein ρ_B is an average formation bulk density, and wherein an average heating rate (h) of the selected volume is about 10 °C/day.